

REMARKS/ARGUMENTS

This case has been carefully reviewed and analyzed in view of the Office Action dated 16 March 2004. Responsive to the Office Action, Claim 13 is now cancelled from this case, and Claims 1, 3-4, and 6-11 are amended for further prosecution with the other pending Claims. It is believed that with such amendment of Claims, there is a further clarification of their recitations.

In the Office Action, the Examiner objected to the Specification for being inconsistent with the Claims. The Examiner directed the removal of all references to "burglary." In the interest of expediting prosecution of this case, the paragraph of the Specification making reference to the term, as well as Fig. 5 and its description, have now been deleted without prejudice. In making such deletions, Applicant reserves the right to include the deleted matter in a continuation application.

Also in the Office Action, the Examiner also objected to the Drawings for containing a misspelling in each of the Figs. 3 and 4. Figs. 3 and 4 are now formally corrected to incorporate the appropriate correction for such misspelling.

The Examiner rejected Claims 1-13 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. It is believed that the Claims amendments incorporated hereby now obviate the Examiner's formal concerns under 35 U.S.C. § 112, second paragraph.

The Examiner additionally rejected Claims 1-3 and 11-13 under 35

U.S.C. § 103(a) as being unpatentable over the Smargiassi, et al. reference in view of the Dillen, et al. reference. In setting forth this rejection, the Examiner acknowledged that Smargiassi, et al. fails to disclose the use of a plurality of cameras, or the merging of images in order to create a whole image for analysis. The Examiner, however, cited Dillen, et al. for such features and concluded that it would have been obvious to one of ordinary skill in the art to have modified the teachings of Smargiassi, et al. accordingly.

The Examiner rejected Claims 4-10 also under 35 U.S.C. § 103(a) as being unpatentable over Smargiassi, et al, in view of Dillen, et al., further in view of the Johnson, et al. reference. In setting forth this rejection, the Examiner cited Johnson, et al. for disclosing the use of a recirculating memory in storing images, and freezing the contents thereof upon the occurrence of a triggering event. The Examiner concluded from this that it would have been obvious to one of ordinary skill in the art to have modified the teachings of Smargiassi, et al. and Dillen, et al. to incorporate such features.

As each of Applicant's newly-amended independent Claims 1, 4, and 11 now more clearly recites, Applicant's smart recording/storing method and system includes among its features the use of a plurality of photographing devices for capturing a plurality of image frames, then "merging" the simultaneously captured ones thereof "into a common image frame." The system and method also includes among its features "selectively" activating and deactivating such photographing devices "responsive to entry" and "exit" of a wafer into a polishing apparatus in the absence of wafer fragmentation, as

each of the independent Claims 1, 4, and 11 also now more clearly recites. As Claim 11 now more clearly recites, moreover, “the capturing of image signals” is “automatically interrupted responsive to detection of wafer fragmentation.” In the disclosed embodiment, the merged, “common image frame” and the frames immediately preceding are available for user examination upon the occurrence of either wafer fragmentation or wafer exit from the polishing apparatus.

The full combination of these and other features now more clearly recited by Applicant’s pending Claims are nowhere disclosed by the cited references. Note, for instance, that Smargiassi, et al. does disclose a system that detects wafer fragmentation in a wafer processing apparatus. That system, however, is one based on extensive image processing. It is quite telling in this regard that Smargiassi, et al. requires – indeed, relies centrally upon – not only the continual acquisition of “an image of a wafer,” it requires the contemporaneous “processor analyses [of] the acquired image to determine whether a wafer fragment is present,” (Abstract). The processor stores then performs image processing upon the acquired pixels of image data, so as to detect optical density contrast changes that might indicate the presence of a wafer fragment.

In addition to the distinctions noted by the Examiner, then, the Smargiassi, et al. system is one which necessitates the vast storage and operation upon data that image processing-based detection invariably requires, rather than storing captured image frames “in a sequentially shifted manner,” as

Applicant's newly-amended independent Claims 1, 4, and 11 each now more clearly recite. Nor does Smargiassi, et al. anywhere even suggest the "selectively" activating and deactivating of the photographing devices also now more clearly recited by each of those Claims. To the contrary, one of the express purposes of Smargiassi, et al.'s detection system is to serve as a safeguarding measure to prevent other functions of the given wafer processing apparatus, such as the temperature control function, from being compromised. Smargiassi, et al. thus requires continual uninterrupted operation, and teaches actively against any condition-responsive "selective[]" activation and deactivation of the image frame capture function.

Given such contrary teachings of the primarily-cited Smargiassi, et al. reference, the teachings of the secondarily-cited Dillen, et al. and Johnson, et al. references are found to be quite ineffectual to the present patentability analysis. The Dillen, et al. reference was cited merely for its disclosure of image generation details using CCD image sensors. The reference nowhere discloses such features as the selective activation/deactivation of photographing devices, sequentially shifted storage of captured image files, the interruption of image capture upon wafer fragmentation, and others now more clearly recited by Applicant's newly-amended independent Claims.

The Johnson, et al. references was cited by the Examiner for disclosing the use of a recirculating memory to freeze image data contents at and around the time of a particular triggering event. The underlying purpose of Johnson, et

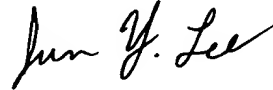
al.'s system is to capture on video record an image of a particular scene precisely at the occurrence of "unpredictable" events like an automobile accident, strike of lightening, and the like – and to do so while obviating the need to accumulate exorbitant amounts of recorded data. While it prescribes measures to limit the required storage capacity, Johnson, et al. thus contemplates and necessitates the ongoing, uninterrupted operation of the image sensor 3 – lest the "unpredictable" triggering event be missed altogether. Hence, the selective activation and deactivation of the image sensor in the manner recited now more clearly by Applicant's independent Claims is hardly permitted, much less disclosed or suggested by Johnson, et al.

It is respectfully submitted, therefore, that the cited Smargiassi, et al., Dillen, et al., and Johnson, et al. references, even when considered together, fail to disclose the unique combination of elements and steps now more clearly recited by Applicant's pending Claims for the purposes and objectives disclosed in the subject Patent Application.

MR1035-777
Serial Number: 09/686,895
Reply to Office Action dated 16 March 2004

It is now believed that the subject Patent Application has been placed fully in condition for allowance, and such action is respectfully requested.

Respectfully submitted,
For: ROSENBERG, KLEIN & LEE



Jun Y. Lee
Registration #40,262

Dated: 13 July 2004

Suite 101
3458 Ellicott Center Drive
Ellicott City, MD 21043
(410) 465-6678